Shrivastav, Brij B

From: Shashi Shrivastav [moxyrani@yahoo.com]
Sent: Friday, May 27, 2005 8:38 AM
To: kamal.dewan@comcast.net; Shrivastav, Brij B
Subject: Fwd: Conditons for rent with option to buy.

Brij and kamal : here is my reply, it has not been sent to robinson yet. read it. think about his offer and then Brij can send the email to robinson. thanks Shashi

Dear Mr. Robinson: Greetings.

If you like you can rent the house now. Conditions for renting the house will be determined by us.

If we want to sale the house at some point while you are still living there, the house will be appraised for it's market value in that area. We will consider your offer to buy the house first should you accept the sale conditions. It is unrealistic to fix the price now. Thanks. Shashi

>
>
> Sorry to send this so late. Here are the conditions
> I am looking for with
> the rent with option to buy. Down payment $1800.
> Rent $1800 with $300 rent
> credit. Lease term 2 years or longer. Purchase
> price in 2 years or earlier
> $475000. I will be responsible for any maintenance
> as long as it does not
> exceed $200, which should cover any and all
> problems if they arise.
> Thanks
> Donald Robinson
>

6/3,AB/1 (Item 1 from file: 2)
DIALOG(R)File 2:INSPEC

5647546 INSPEC Abstract Number: A9717-0758-004
Title: Mutual inductance in the bird-cage resonator
Author(s): **Tropp, J.**
Author Affiliation: Gen. Electr. Med. Syst., Fremont, CA, USA
Journal: Journal of Magnetic Resonance vol.126, no.1 p.9-17
Publisher: Academic Press,
Publication Date: May 1997 Country of Publication: USA
CODEN: JOMRA4 ISSN: 1090-7807
SICI: 1090-7807(199705)126:1L.9:MIBC;1-L
Material Identity Number: J153-97005
U.S. Copyright Clearance Center Code: 1090-7807/97/$25.00
Language: English
Abstract: Formulas are derived to account for the effect of the mutual inductances, between an meshes, upon the electrical resonance spectra bird-cage resonators, and similar structures such as the **TEM** resonator of Raschmann (United States Patent 4,746,866) and Vaughan et al. (1994). The equations are parameterized in terms of isolated mesh frequencies and coupling coefficients, and ought therefore apply not only to simple magnetic couplings used in the derivation, but to electromagnetic couplings as well. A method for measuring the coupling coefficients-applicable to shielded as well as unshielded resonators-is described, based upon the splitting of frequencies in pairs of coupled resonators; and detailed comparisons are given between calculated and measured resonance spectra: for bird-cage resonators, with and without shields, and for the **TEM** resonator.
Subfile: A

6/3,AB/2 (Item 1 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

11700627 Genuine Article#: 685RX Number of References: 15
Title: Dissipation, resistance, and rational impedance matching for **TEM** and birdcage resonators (ABSTRACT AVAILABLE)
Author(s): **Tropp J (REPRINT)**
Corporate Source: Gen Elect Med Syst,47697 Westinghouse Dr/Fremont//CA/94539 (REPRINT); Gen Elect Med Syst,Fremont//CA/94539
Journal: CONCEPTS IN MAGNETIC RESONANCE, 2002, V15, N2 (JUN), P177-188
ISSN: 1043-7347 Publication date: 20020600
Publisher: JOHN WILEY & SONS INC, 111 RIVER ST, HOBOKEN, NJ 07030 USA
Language: English Document Type: ARTICLE
Abstract: Using simple circuit parameters, mathematical expressions are given for the power dissipated by pure excitation of the principal mode of a **Transverse ElectroMagnetic** (**TEM**) or a birdcage resonator. From these, the Q, or quality factors are then derived for the **TEM**, and for the high and low pass birdcage. The drive point impedance is then expressed in terms of the Q and the element capacitance; and the synthesis of impedance matching networks by means of the Smith Chart is described, or in explicit detail for the discrete (or lumped) element **TEM** and the high pass birdcage, and in passing for the distributed **TEM** and the low pass birdcage. The limited applicability of a commonly used matching formula is noted. A complementary method of determining the drive point impedance by direct measurement is also given, along with corresponding Smith Chart

calculations. All the proposed methodology is illustrated with respect to a pair of real world resonators-a discrete element **TEM** and a high pass birdcage-designed for proton imaging of the human head at 3.0 T.

11/3,AB/1 (Item 1 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

15138769 PMID: 14705058

Lumped-element planar strip array (LPSA) for parallel **MRI**.

Lee Ray F; Hardy Christopher J; **Sodickson Daniel K**; Bottomley Paul A

Department of Radiology, New York University, New York, New York 10016, USA. ray.lee@med.nyu.edu

Magnetic resonance in medicine - official journal of the Society of Magnetic Resonance in Medicine / Society of Magnetic Resonance in Medicine (United States) Jan 2004, 51 (1) p172-83, ISSN 0740-3194
Journal Code: 8505245

Contract/Grant No.: 1 R01 RR15396-01A1; RR; NCRR

Publishing Model Print

Document type: Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: MEDLINE; Completed

The recently introduced planar strip array (PSA) can significantly reduce **scan** times in **parallel MRI** by enabling the utilization of a large number of RF strip detectors that are inherently decoupled, and are tuned by adjusting the strip length to integer multiples of a quarter-wavelength (lambda/4) in the presence of a ground plane and dielectric substrate. In addition, the more explicit spatial information embedded in the phase of the signals from the strip array is advantageous (compared to loop arrays) for limiting aliasing artifacts in parallel **MRI** . However, losses in the detector as its natural resonance frequency approaches the Larmor frequency (where the wavelength is long at 1.5 T) may limit the signal-to-noise ratio (SNR) of the PSA. Moreover, the PSA's inherent lambda/4 structure severely limits our ability to adjust detector geometry to optimize the performance for a specific organ system, as is done with loop coils. In this study we replaced the dielectric substrate with discrete capacitors, which resulted in both SNR improvement and a tunable lumped-element PSA (LPSA) whose dimensions can be optimized within broad constraints, for a given region of interest (ROI) and **MRI** frequency. A detailed theoretical analysis of the LPSA is presented, including its equivalent circuit, electromagnetic fields, SNR, and g-factor maps for parallel **MRI**. Two different decoupling schemes for the LPSA are described. A four-element LPSA prototype was built to test the theory with quantitative measurements on images obtained with parallel and conventional acquisition schemes. Copyright 2003 Wiley-Liss, Inc.

35/3,AB/1 (Item 1 from file: 8)
DIALOG(R)File 8:Ei Compendex(R)

05080918
E.I. No: EIP98084328912
Title: Effect of small **magnetic field** on the absorption property of superconducting Y-Ba-Cu-O (the magnetic memory effect)
Author: Khatiashvili, N.G.; Kovacs, Gy.; Porjesz, T.
Corporate Source: Eotvos Univ, Budapest, Hung
Source: Superlattices and Microstructures v 24 n 1 1998. p 93-97
Publication Year: 1998
CODEN: SUMIEK ISSN: 0749-6036
Language: English
Abstract: A resonance interaction is manifested between **electromagnetic waves** and superconductors that depends on the applied d.c. **magnetic field** but does not depend on the **frequency** of the **electromagnetic** field in the range of 13-130 MHz. Once the sample temperature is below the transition temperature, the absorption property of the sample `remembers' the value and direction of the applied **magnetic field**. A dependence of the resonance field B//p//e//a//k on the applied field B//m//a//x was also obtained. 3 Refs.

35/3,AB/2 (Item 2 from file: 8)
DIALOG(R)File 8:Ei Compendex(R)

01718656
E.I. Monthly No: EI8501004596
E.I. Yearly No: EI85065601
Title: MAGNET SYSTEMS USED IN MEDICAL **NMR**.
Author: Gordon, R. E.; Timms, W. E.
Corporate Source: Oxford Research Systems Ltd, Abingdon, Engl
Source: Computerized Radiology v 8 n 5 Sep-Oct 1984 p 245-261
Publication Year: 1984
CODEN: COMRDW
Language: ENGLISH
Abstract: The aim of this article is to concentrate on the features of the magnet system which is at the heart of the **NMR** machine and to describe the main types of magnets that are available, such as permanent magnets, resistive electromagnets, and **superconducting** magnets. The **magnetic field** strength, **field** uniformity and the physical size of the magnet are the principal parameters available to the system designer. The relationships between these and how they affect the performance that can be achieved are discussed, together with some of the issues that must be considered in the installation of these magnet-based systems. The peripheral **magnetic field** of the **magnet** must be considered when the site is planned and prepared. Some of the planning criteria are discussed with respect to the magnet, and its ancillary equipment and services. In addition, a brief and simple explanation of **nuclear magnetic resonance** (**NMR**) is given, in which **NMR** is characterized as a type of spectroscopy based on the absorption of **radio-frequency** (r. f.) **electromagnetic** radiation by the atomic nuclei (spins) of matter when placed in a strong **magnetic field**. 7 refs.

35/3,AB/3 (Item 1 from file: 94)
DIALOG(R)File 94:JICST-EPlus

04087575 JICST ACCESSION NUMBER: 99A0328969 FILE SEGMENT: JICST-E
Protection towards Effects of **RF Field** around Clinical **Magnet**.
YAMADA MASAYUKI (1); KOGA SUKEHIKO (1); OKADA TATSUHIKO (2); ANNO HIROFUMI (3); KATADA KAZUHIRO (3); YASUI SHIN'ICHIRO (4); NIITANI KATSUJI (5)
(1) Fujita Health Univ., Sch. of Med.; (2) Fujita Health Univ., Hosp.; (3) Fujita Health Univ., Sch. of Hyg.; (4)Toyoumedikku; (5) Teijin Ltd.
Nippon Jiki Kyomei Igakkai Zasshi(Japanese Journal of Magnetic Resonance in Medicine), 1999, VOL.19,NO.1, PAGE.34-42, FIG.5, TBL.8, REF.15
JOURNAL NUMBER: X0020ABC ISSN NO: 0914-9457
UNIVERSAL DECIMAL CLASSIFICATION: 616-073:612-087 616-07-09
LANGUAGE: Japanese COUNTRY OF PUBLICATION: Japan
DOCUMENT TYPE: Journal
ARTICLE TYPE: Original paper
MEDIA TYPE: Printed Publication
ABSTRACT: The purpose of this research is to investigate a leakage **radio frequency electromagnetic field**(LRF) around clinical **magnetic resonance imager**(**MRI**) and to propose a way to protect the attendant who are by patients in a scan room from the LRF. In this research, we measured the LRF around **MRI** and made a protective gown by using "Hertz II" which is an **electromagnetic wave** shield fabric. The result of our research showed that the LRF depends on MR equipment. The highest E value was 15.1V/m at the back of MR equipment with a **superconductive magnet**(1.5T). The extent of measurements did not exceed a limit value for the electromagnetic radiation in the 1998 ICNIRP standard. All the same, it is clear that the attendant are exposed to the LRF from **MRI** during MR examination. The Hertz II was effective fabric for reducing the LRF which was between 8.5MHz and 64MHz. Therefore, we suggest using the protective gown which is made of the Hertz II as the way to protect the attendant from possible hazards and fear of the LRF. (author abst.)

43/3,AB/1 (Item 1 from file: 8)
DIALOG(R)File 8:Ei Compendex(R)

04429141
E.I. No: EIP96063228082
Title: Generation and detection of **transverse** ultrasonic **waves** via vortex tilting in superconductive YBa//2Cu//3O//7
Author: Haneda, H.; Ishiguro, T.; Murakami, M.
Corporate Source: Kyoto Univ, Kyoto, Jpn
Source: Applied Physics Letters v 68 n 23 Jun 3 1996. p 3335-3337
Publication Year: 1996
CODEN: APPLAB ISSN: 0003-6951
Language: English
Abstract: The generation and detection of **transverse** ultrasonic **waves** in a high-T//c superconductor by an rf magnetic field in the vortex state were carried out. The results are explained in terms of the vortex pinning interaction, with which a tilt mode of the vortex array is associated. The polarization of the **transverse** ultrasonic **wave** is parallel to the rf field, or the direction of the vortex displacement. The rather sharp decrease of the signals and the nonlinearity with respect to H//0 near T//c in the line vortex case are ascribed to thermal depinning. In the Josephson vortex case, a gradual decrease of the signals with temperature is explained by the small value of the Labusch parameter, and a nonlinearity of the ultrasonic generation signals with respect to the rf field is ascribed to the weak pinning. 7 Refs.

47/3,AB/1 (Item 1 from file: 2)
DIALOG(R)File 2:INSPEC

6227144 INSPEC Abstract Number: A1999-11-5240D-001
Title: Nonlinear dynamics of an ordinary electromagnetic mode in a pair plasma
Author(s): Machabeli, G.Z.; Vladimirov, S.V.; Melrose, D.B.
Author Affiliation: Sch. of Phys., Sydney University, NSW, Australia
Journal: Physical Review E (Statistical Physics, Plasmas, Fluids, and Related Interdisciplinary Topics) vol.59, no.4 p.4552-8
Publisher: APS through AIP,
Publication Date: April 1999 Country of Publication: USA
CODEN: PLEEE8 ISSN: 1063-651X
SICI: 1063-651X(199904)59:4L.4552:NDOE;1-1
Material Identity Number: A367-1999-004
U.S. Copyright Clearance Center Code: 1063-651X/99/59(4)/4552(7)/$15.00
Language: English
Abstract: Nonlinear generation of an ordinary electromagnetic mode (o mode), which has high phase velocity (v/sub ph/>>c), and at the same time, is almost longitudinal for long wavelengths, is discussed in an electron-positron plasma. The solution of the problem of increasing energy ("plasmon condensate") of the long-wavelength o mode based on modulations of the wave by the beat wave of two higher **frequency transverse electromagnetic waves** (propagating along the external **magnetic field**) is proposed. The system of equations describing three-dimensional nonlinear dynamics of this "superluminal" o mode is derived and analytical solution for the modulated wave is found. The **generated waves** can have components propagating obliquely to the **magnetic field** . Important consequences of the effect to processes in pulsar's magnetospheres, in particular, the pulsar radio emission, are discussed.
Subfile: A

47/3,AB/2 (Item 1 from file: 144)
DIALOG(R)File 144:Pascal

14269105 PASCAL Number: 99-0473169
Bursts of Superreflected Laser Light from Inhomogeneous Plasmas due to the Generation of Relativistic Solitary Waves
SENTOKU Y; ESIRKEPOV T Zh; MIMA K; NISHIHARA K; CALIFANO F; PEGORARO F; SAKAGAMI H; KITAGAWA Y; NAUMOVA N M; BULANOV S V
Institute of Laser Engineering, Osaka University, Osaka, Japan; Moscow Institute of Physics and Technology, Dolgoprudnyi, Russia; Physical Department of Pisa University and INFM, Pisa, Italy; Himeji Technology University, Hyogo, Japan; General Physics Institute RAS, Moscow, Russia
Journal: Physical review letters, 1999-10-25, 83 (17) 3434-3437
Language: English
In an inhomogeneous plasma, low-frequency solitary **waves**, **generated** by superintense laser pulses, are accelerated towards the plasma-vacuum interface where they radiate their energy in the form of low-**frequency electromagnetic** bursts. The **transverse** inhomogeneity of the plasma inside the self-focusing radiation channel leads to guiding of the solitary waves. These solitary waves excite a two-ribbon **magnetic field** structure in their wake. These phenomena have been studied with two-dimensional particle-in-cell

simulations and are expected to be observed in present-day laser-plasma experiments.

49/3,AB/1 (Item 1 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

14882659 PMID: 12866965
[Spiral computed tomography (CT) and magnetic resonance imaging (MRI) in assessment of the skull base encroachment in nasopharyngeal carcinoma]
Xie Chuan-Miao; Liang Bi-Ling; Wu Pei-Hong; Zheng Lie; Ruan Chao-Mei; Li Li; Mo Yun-Xian; Zhong Rui; Chen Yong-Xin; Lin Hao-Gao
Department of Imaging and Interventional Radiology, Cancer Center, Sun Yat-sen University, Guangzhou, Guangdong, 510060, PR China.
Ai zheng = Aizheng = Chinese journal of cancer (China) Jul 2003, 22 (7) p729-33, ISSN 1000-467X Journal Code: 9424852
Publishing Model Print
Document type: Journal Article ; English Abstract
Languages: CHINESE
Main Citation Owner: NLM
Record type: MEDLINE; Completed
BACKGROUND & OBJECTIVE: With the general using of computed tomography (CT) and magnetic resonance imaging (MRI), it is important to determine which method is more sensitive in detecting the skull base encroachment in clinic. This article was designed to investigate the diagnostic value of CT and MRI in detecting the skull base erosion in nasopharyngeal carcinoma patients. METHODS: Sixty-one cases pathologically proven as nasopharyngeal carcinoma were selected from August 1993 to September 2001. three-dimensional reconstruction with spiral CT thin slices scan were performed in 8 cases. CT scan was performed with Elscient CT Twin Flash; axial **scan** was **parallel** to the OM line routinely from soft palate to the suprasellar cistern. There were 13 cases with enhancement scan. MRI scan was performed by Philips T5-II **super-conducting magnetic** resonance imaging system (0.5T). The standard quadrature head coil was used. Routine axial, sagittal, and coronal image with SE sequences were obtained. Scanned field ranged from the soft palate to the suprasellar cistern. After plain scan, enhanced scan was performed in 55 of 61 cases. RESULTS: MRI discovered the skull base encroached more precisely than CT, 17 cases by CT and 26 cases by MRI, respectively. The early bone marrow infiltration was seen at clivus, basilar pterygoid, and basilar sphenoid in 6 cases by MRI scan while CT scan showed no abnormal lesion at these sites. In addition, MRI revealed nasopharyngeal carcinoma tissue infiltrated along the mandibular nerve (3 cases) while CT scan showed no change of these structures. CONCLUSION: Both CT and MRI can reveal that the tumor encroaches on the skull base by either destroying the bony structure or breaking through the natural foramen. MRI is more sensitive than CT in detecting the skull base encroachment. MRI could reveal the early infiltration of the bone marrow and tumor infiltration along the mandibular nerve. MRI confirms the dimension of nasopharyngeal carcinoma more precisely than CT. The three dimension reconstructional spiral CT was directer in discovering the dimension of the tumor.

49/3,AB/2 (Item 2 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

14506495 PMID: 12451996
[Assessment of retropharyngeal lymph node by comparing CT with MRI]
Xie Chuan-miao; Liang Bi-ling; Lin Hao-gao; Wu Pei-hong
Department of Medical Imaging and Interventional Radiology, Cancer Center, Sun Yat-sen University, Guangzhou 510060, P. R. China.
Ai zheng = Aizheng = Chinese journal of cancer (China) Mar 2002, 21

(3) p285-8, ISSN 1000-467X Journal Code: 9424852
Publishing Model Print
Document type: Journal Article ; English Abstract
Languages: CHINESE
Main Citation Owner: NLM
Record type: MEDLINE; Completed

BACKGROUND & OBJECTIVES: The incidence of nasopharyngeal carcinoma (NPC) is high as part of malignancy of head and neck in South China. Some of the foreign radiologists investigated on it by comparing CT (computed tomography) with MRI (magnetic resonance imaging), but there was no description for metastatic retropharyngeal lymph node (RPN) of NPC. None of this kind of article published in domestic. The current study was designed to evaluate CT and MRI in identifying retropharyngeal node by comparing the finding of CT and MRI in 56 patients with NPC. METHODS: Fifty-six cases pathologically proven as nasopharyngeal carcinoma were selected from August, 1993 to December, 2000; CT scan were performed by Elscient CT Twin flash, axial **scan** were **parallel** to the OM line routinely from soft palate to the supracellar cistern. MRI scan were performed by Philip T5-II **super-conducting magnetic** resonance imaging system(0.5T). The standard quadrature head coil was used. Routine axial, saggital, and coronal scan with SE sequences were obtained. Scanned field ranged from soft palate to the supracellar cistern. After plain scaned, contrast material were administrated in 40 cases by intravenous injection of Gd-DTPA 0.1 mmol per kilogram body weight. And then repeat axial, saggital and coronal scan. RESULTS: MRI recovered the RPN more exactly than CT (13 cases by CT and 24 cases by MRI) and there was significant differentiation 0($P < 0.05$). It is possible to distinguish the metastatic RPN of NPC from the directly infiltration of tumor by MRI. CONCLUSIONS: MRI is more precise than CT in differentiating the RPN from the directly invasion by tumor tissue of NPC, which will affects the 92 Chinese staging systems, for NPC obviously.

49/3,AB/3 (Item 1 from file: 2)
DIALOG(R)File 2:INSPEC

5674904 INSPEC Abstract Number: A9719-7525-013
Title: Single crystal neutron diffraction study of the magnetic structure of TmNi/sub 2/B/sub 2/C
Author(s): Sternlieb, B.; Stassis, C.; Goldman, A.I.; Canfield, P.; Shapiro, S.
Author Affiliation: Dept. of Phys., Brookhaven Nat. Lab., Upton, NY, USA
Journal: Journal of Applied Physics Conference Title: J. Appl. Phys. (USA) vol.81, no.8 p.4937-9
Publisher: AIP,
Publication Date: 15 April 1997 Country of Publication: USA
CODEN: JAPIAU ISSN: 0021-8979
SICI: 0021-8979(19970415)81:8L.4937:SCND;1-1
Material Identity Number: J004-97015
U.S. Copyright Clearance Center Code: 0021-8979/97/81(8)/4937/3/$10.00
Conference Title: 41st Annual Conference on Magnetism and Magnetic Materials
Conference Sponsor: AIP; IEEE; TMS; Office of Naval Res.; ASTM; APS; American Ceramic Soc
Conference Date: 12-15 Nov. 1996 Conference Location: Atlanto, GA, USA
Language: English

Abstract: Neutron diffraction techniques have been used to study the magnetic structure of single crystals of the **magnetic superconductor** (T/sub c/ equivalent to 11 K) TmNi/sub 2/B/sub 2/C. We

find that below approximately 1.5 K the magnetic moments order in an incommensurate spin wave with propagation vector q/sub m/=q/sub m/(a*+b*) [or q/sub m/=q/sub m/(a*-b*)] with q/sub m/=0.094+or-0.001. The spin wave is transverse with the moments aligned along the c axis, and the observation of relatively intense higher-order harmonics shows that the modulation is not purely sinusoidal but considerably squared. This incommensurate magnetic structure, which coexists with superconductivity below T/sub N/ equivalent to 1.5 K, is quite different from those observed in the **magnetic superconductors** HoNi/sub 2/B/sub 2/C and ErNi/sub 2/B/sub 2/C. The origin of diffraction peaks observed in **scans parallel** to a* is briefly discussed.

Subfile: A

49/3,AB/4 (Item 1 from file: 6)
DIALOG(R)File 6:NTIS

2001175 NTIS Accession Number: DE97002391

Single crystal neutron diffraction study of the magnetic structure of TmNi(sub 2)B(sub 2)C

Sternlieb, B. ; Shapiro, S. ; Stassis, C. ; Goldman, A. I. ; Canfield, P.
Ames Lab., IA.

Corp. Source Codes: 001709000; 0305000
Sponsor: Department of Energy, Washington, DC.
Report No.: IS-M-861; CONF-961141-8
1997 14p
Languages: English Document Type: Conference proceeding
Journal Announcement: GRAI9713; ERA9724

Annual conference on magnetism and magnetic materials (41st), Atlanta, GA (United States), 12-15 Nov 1996. Sponsored by Department of Energy, Washington, DC.

NTIS Prices: PC A03/MF A01

Neutron diffraction techniques have been used to study the magnetic structure of single crystals of the **magnetic superconductor** (T(sub c) (congruent) 11K) TmNi(sub 2)B(sub 2)C. We find that below approximately 1.5K the magnetic moments order in an incommensurate spin wave with propagation vector q(sub m) = q(sub m) (a* +b*) (or q(sub m) = q(sub m) (a* + b*)) with q(sub m) = 0.094 (+-) 0.001. The spin wave is transverse with the moments aligned along the c-axis, and the observation of relatively intense higher order harmonics shows that the modulation is not purely sinusoidal but considerably squared. This incommensurate magnetic structure, which coexists with superconductivity below T(sub N) (congruent) 1.5K, is quite different from those observed in the **magnetic superconductors** HoNi(sub 2)B(sub 2)C and ErNi(sub 2)B(sub 2)C. The origin of diffraction peaks observed in **scans parallel** to a* is briefly discussed.

49/3,AB/5 (Item 1 from file: 144)
DIALOG(R)File 144:Pascal

13379470 PASCAL No.: 97-0564865

Single crystal neutron diffraction study of the magnetic structure of

TmNi2B2C

STERNLIEB B ; STASSIS C ; GOLDMAN A I ; CANFIELD P ; SHAPIRO S
Department of Physics, Brookhaven National Laboratory, Upton, New York 11973; Ames Laboratory and Department of Physics and Astronomy, Iowa State University, Ames, Iowa 50011; Department of Physics, Brookhaven National Laboratory, Upton, New York 11973

Journal: Journal of applied physics, 1997-04-15, 81 (8) 4937-4939
Language: English

Neutron diffraction techniques have been used to study the magnetic structure of single crystals of the **magnetic superconductor** (Tc backward congruency 11 K) TmNi2B2C. We find that below approximately 1.5 K the magnetic moments order in an incommensurate spin wave with propagation vector qm=qm(a*+b*) (or qm=qm(a*-b*)) with qm=0.094 +- 0.001. The spin wave is transverse with the moments aligned along the c axis, and the observation of relatively intense higher-order harmonics shows that the modulation is not purely sinusoidal but considerably squared. This incommensurate magnetic structure, which coexists with superconductivity below TN backward congruency 1.5 K, is quite different from those observed in the **magnetic superconductors** HoNi2B2C and ErNi2B2C. The origin of diffraction peaks observed in **scans parallel** to a* is briefly discussed. (c) 1997 American Institute of Physics.

49/3,AB/6 (Item 1 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

05174689 Genuine Article#: VF317 Number of References: 38
Title: THE CHEMICAL-STRUCTURE OF RARE-EARTH SUPERLATTICES - A HIGH-RESOLUTION X-RAY-SCATTERING STUDY (Abstract Available)
Author(s): MCMORROW DF; SWADDLING PP; COWLEY RA; WARD RCC; WELLS MR
Corporate Source: RISO NATL LAB,DEPT SOLID STATE PHYS/DK-4000 ROSKILDE//DENMARK/; CLARENDON LAB/OXFORD//ENGLAND/
Journal: JOURNAL OF PHYSICS-CONDENSED MATTER, 1996, V8, N36 (SEP 2), P 6553-6567
ISSN: 0953-8984
Language: ENGLISH Document Type: ARTICLE
Abstract: The chemical structure of a series of Ho/Lu and Ho/Y superlattices, all grown by MBE, has been investigated using high-resolution x-ray scattering techniques. The detailed functional form of the scattering was determined in **scans** performed both **parallel** and perpendicular to the growth direction. For scans of the wave-vector transfer parallel to the growth direction the superlattice satellites broaden as a function of the satellite index. This is shown to be consistent with the presence of discrete cumulative roughness in the superlattices that scales with the thickness of the superlattice period. The transverse width of the superlattice Bragg peaks broadens almost linearly as a function of the component of the reduced wavevector parallel to the growth direction, while the line shape is invariant, and is described by a Lorentzian raised to the power of approximate to 5/2. It is shown that this arises from the conformal nature of the interface roughness, and the roughness exponent characterizing the average interface is determined to be alpha = 0.85 +/- 0.05. The dependence of the interface morphology on the growth temperature is also considered, and the limitations of current structural models discussed.

49/3,AB/7 (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX

007485943
WPI Acc No: 1988-119877/198818
Superconductive quantum **magnetometer** with Josephson junction - has two-hole **scanner** with two **parallel**, superconductive, induction coils, close by Josephson junction NoAbstract
Patent Assignee: ZRUBEC V (ZRUB-I)
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
CS 8606939	A	19880315				198818	B

Priority Applications (No Type Date): CS 866939 A 19860926
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
CS 8606939	A		8		

53/3,AB/1 (Item 1 from file: 987)
DIALOG(R)File 987:TULSA (Petroleum Abs)

00745488 PETROLEUM ABSTRACTS NO.: 490887
METHOD OF DETECTING STRUCTURES
AUTHOR (INVENTOR): COHEN C J
PATENT INFORMATION: US 4932753, C 6/12/90, F 5/22/87, PR AUSTRAL 5/23/86 (APPL 6063) (G02B-027/22) (11 PP; 24 CLAIMS)
PATENT (NO, DATE): US 4932753 19900612
APPLICATION (NO, DATE): 19870522
PRIORITY (NO, DATE): AU 6063 19860523
PUBLICATION YEAR: 1990
IPC CODE: G02B-027/22
LANGUAGE: ENGLISH

A method is described of obtaining a stereoscopic view from 2 satellite or 2 aerial photographs of the same or overlapping area. The method involves aligning the photographs in a stereoscope with the horizontal axis of the stereoscope **aligned parallel** to the flight path taken to produce the photographs or **parallel** to the **scan** direction employed by the satellite. The photographs are produced on infrared film in the case of aerial photography or enhanced to accentuate red and infrared in the case of satellite photography. A series of photographs are produced each with a desired color balance. The photographs are cross compared in the stereoscope to produce an enhanced stereoscopic effect to enable detection and/or measurement of structures or effects

56/3,AB/1 (Item 1 from file: 2)
DIALOG(R)File 2:INSPEC

8295757 INSPEC Abstract Number: A2005-07-6855-045, B2005-04-0560-001
Title: Orientation control of high-density polyethylene molecular chains using atomic force microscope
Author(s): Kimura, K.; Kobayashi, K.; Yamada, H.; Horiuchi, T.; Ishida, K.; Matsushige, K.
Author Affiliation: Innovative Cluster Creation Project, Kyoto Univ., Japan
Journal: Japanese Journal of Applied Physics, Part 2 (Letters) vol.43, no.11A p.L1390-3
Publisher: Japan Soc. Appl. Phys,
Publication Date: 1 Nov. 2004 Country of Publication: Japan
CODEN: JAPLD8 ISSN: 0021-4922
SICI: 0021-4922(20041101)43:11AL.11390:OCHD;1-8
Material Identity Number: C580-2005-001
Language: English
Abstract: We have succeeded in the orientation control of molecular chains in high-density polyethylene thin films using an atomic force microscope as a modification tool. To modify the molecular orientation, we scanned a cantilever tip in contact with the film surface while the film temperature was kept just below its melting point. This "modification scan" **aligned** molecular chains **parallel** to the **scan** direction, thus well-aligned lamellar crystals were subsequently formed. Since polyethylene is the most simple linear crystalline polymer, the result strongly suggests the applicability of the technique to many other linear polymers, which promisingly expands its potential for device applications.
Subfile: A B

56/3,AB/2 (Item 2 from file: 2)
DIALOG(R)File 2:INSPEC

01195583 INSPEC Abstract Number: B78025830
Title: Improved contrast ratio of displays based on scattering
Author(s): Chu, W.H.; Dewey, A.G.; Jacobs, J.T.
Author Affiliation: IBM Corp., Armonk, NY, USA
Journal: IBM Technical Disclosure Bulletin vol.20, no.3 p.1203
Publication Date: Aug. 1977 Country of Publication: USA
CODEN: IBMTAA ISSN: 0018-8689
Language: English
Abstract: The method of using a polarizer with or without a separate analyzer to increase the contrast ratio is described. A single polarizer sheet placed in front of the display cell and **aligned parallel** to the **scan** direction is sufficient to improve the contrast ratio of reflective laser-scanned liquid crystal displays. For a transmissive display, a separate polarizer and analyzer are required. This technique uses the experimentally observed fact that a scattering texture in a smectic liquid crystal display cell will depolarize incident polarized light.
Subfile: B

56/3,AB/3 (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX

016251883
WPI Acc No: 2004-409777/200438
XRPX Acc No: N04-325386
  Multi-beam scanning optical system for printing application, has semiconductor lasers positioned such that linear array of light emitting points of each of lasers is **aligned** in **parallel** with auxiliary **scanning** direction
Patent Assignee: ASAHI OPTICAL CO LTD (ASAO); PENTAX CORP (ASAO)
Inventor: IIZUKA T
Number of Countries: 002 Number of Patents: 002
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 20040080800	A1	20040429	US 2003690648	A	20031023	200438	B
JP 2004144981	A	20040520	JP 2002309518	A	20021024	200438	

Priority Applications (No Type Date): JP 2002309518 A 20021024
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20040080800	A1		14	G02B-026/08	
JP 2004144981	A		15	G02B-026/10	

Abstract (Basic): US 20040080800 A1
Abstract (Basic):
NOVELTY - The scanning optical system (1) includes two semiconductor lasers (11,12) each having a linear array of light emitting points. The lasers are positioned such that the linear array of light emitting points of each of the lasers is **aligned** in **parallel** with an auxiliary scanning direction.
DETAILED DESCRIPTION - The spots formed by the beams emitted by one laser and the beam spots formed by the beams emitted by the other laser are alternately arranged on a scan target surface in the auxiliary scanning direction.
USE - For printing application.
ADVANTAGE - Provides multi-beam scanning optical system which makes scan lines on scan target surface overlap one another without employing an expensive anamorphic optical system and without loss of light power of laser beams.
DESCRIPTION OF DRAWING(S) - The figure is a top view of the scanning optical system.
Scanning optical system (1)
Semiconductor lasers (11,12)
Collimator lenses (13,14)
pp; 14 DwgNo 1/6

56/3,AB/4 (Item 2 from file: 350)
DIALOG(R)File 350:Derwent WPIX

014343182
WPI Acc No: 2002-163885/200221
XRPX Acc No: N02-125117
  Simultaneous double discharge plasma display panel for displaying characters, performs simultaneous discharge operation between scan and sustain electrodes which are driven by commonly coupled electrodes to cells
Patent Assignee: ORION ELECTRIC CO LTD (ORIO-N)
Inventor: HAN J G; JU Y D
Number of Countries: 021 Number of Patents: 003
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
WO 200131674	A1	20010503	WO 2000KR1224	A	20001027	200221	B
KR 2001039313	A	20010515	KR 9947640	A	19991029	200221	
KR 2002048984	A	20020624	KR 2002705329	A	20020426	200281	

Priority Applications (No Type Date): KR 9947640 A 19991029
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 200131674	A1	E	30	H01J-017/49	
	Designated States (National): JP KR US				
	Designated States (Regional): AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE				
KR 2001039313	A			H01J-017/49	
KR 2002048984	A			H01J-017/49	

Abstract (Basic): WO 200131674 A1
Abstract (Basic):

NOVELTY - Sustain electrodes (22,23) are **aligned** in parallel between **parallel aligned scan** electrodes (21,24) on substrate (10). Address electrode (17) is aligned orthogonal to respective scan and sustain electrodes on substrate (16). The electrodes (21-24) are driven by commonly coupled electrodes to all cells of PDP. Discharge operation is simultaneously done between respective scan and sustain electrodes.

USE - For displaying characters or graphics using light emitted from plasma generated during gas discharge.

ADVANTAGE - Improves luminous efficiency and luminance by simultaneously generating discharge in several pixels within a unit cell.

DESCRIPTION OF DRAWING(S) - The figure shows the schematic view of an alternating current type PDP of a three electrode simultaneous double discharge.

Substrates (10,16)
Address electrode (17)
Scan electrodes (21,24)
Sustain electrodes (22,23)
pp; 30 DwgNo 3/10

56/3,AB/5 (Item 3 from file: 350)
DIALOG(R)File 350:Derwent WPIX

014137041
WPI Acc No: 2001-621252/200172
XRPX Acc No: N01-463608
Bar-code reader for document image with background patterns has decoder which decodes bar-code from existence information on bar detected by trace unit
Patent Assignee: MATSUSHITA DENKI SANGYO KK (MATU)
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
JP 2001229339	A	20010824	JP 200040679	A	20000218	200172	B

Priority Applications (No Type Date): JP 200040679 A 20000218
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
JP 2001229339	A		12	G06K-007/10	

Abstract (Basic): JP 2001229339 A
Abstract (Basic):
NOVELTY - An input image is **scanned** in **parallel** direction in **alignment** with the central axis of a bar-code area, and the trace data of a bar-code are generated. The trace data are referred for every pitch of a bar. A trace unit (3) detects the existence of the bar. A decoder (4) decodes a bar-code from existence information on the bar.

DETAILED DESCRIPTION - An image input unit (1) reads a document image containing bar-code. An area detection unit (2) detects the inclination and the position of the bar-code in the input image.

USE - For document image with background patterns, such as character, and graphic.

ADVANTAGE - Performs correct detection and decoding of bar-code present in arbitrary position in document image. Improves reliability and accuracy.

DESCRIPTION OF DRAWING(S) - The figure shows the block diagram of the bar-code reader. (Drawing includes non-English language text).

Image input unit (1)
Area detection unit (2)
trace unit (3)
Decoder (4)
pp; 12 DwgNo 1/14

56/3,AB/6 (Item 4 from file: 350)
DIALOG(R)File 350:Derwent WPIX
(c) 2005 Thomson Derwent. All rts. reserv.

013110242
WPI Acc No: 2000-282113/200024
XRPX Acc No: N00-212288
Hand-held optical scanner for reading two-dimensional bar-code symbols and the like and for digitizing image data and subsequent decoding in a personal computer
Patent Assignee: SYMBOL TECHNOLOGIES INC (SYMB-N)
Inventor: CHEW S; FAZEKAS P; GOLDMAN R; WYATT P
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 6036094	A	20000314	US 97874827	A	19970613	200024	B

Priority Applications (No Type Date): US 97874827 A 19970613
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 6036094	A		17	G06K-007/10	

Abstract (Basic): US 6036094 A
Abstract (Basic):
NOVELTY - A scanner (1) is designed to fit comfortably and easily within the grip of a hand in order to be aligned with a symbol (3) printed onto a substrate (4) for its scanning and the thumb fits into a recess (32), while the index finger rests in a recess on a platform (16), which is associated with an internal activation switch, activated by slight downwards movement. The front edge (34) of the **scanner** is **aligned parallel** with the top edge of the symbol, the scanner is activated and rolled over the symbol.

USE - Scanning of two-dimensional bar-code symbols using a hand-held device.

ADVANTAGE - Easy observation of bar-code while aligning reading

device for scanning.

DESCRIPTION OF DRAWING(S) - The drawing is a perspective view of the scanning device being gripped and used for scanning

Scanner (1)

Thumb recess (32)

Platform (16)

Front edge (34)

pp; 17 DwgNo 3/14

56/3,AB/7 (Item 5 from file: 350)

DIALOG(R)File 350:Derwent WPIX

009223736

WPI Acc No: 1992-351157/199243

Related WPI Acc No: 1993-290630; 1995-336509

XRPX Acc No: N92-267726

Liquid crystal structure for display appts. - has pair of substrates with **scanning** electrodes and **parallel** uniaxial **alignment** axes and ferroelectric liquid crystal between substrates one of which has ridges

Patent Assignee: CANON KK (CANO)

Inventor: HANYU Y; HOTTA T; INABA Y; KODERA Y; MIHARA T; MIZUNO H; NAKAMURA K; OKADA S; TANIGUCHI O; HOTTA Y

Number of Countries: 017 Number of Patents: 004

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
EP 509490	A2	19921021	EP 92106552	A	19920415	199243	B
JP 5072536	A	19930326	JP 91261353	A	19910913	199317	
EP 509490	A3	19930526				199403	
US 5541752	A	19960730	US 92868327	A	19920414	199636	
			US 94284051	A	19940801		

Priority Applications (No Type Date): JP 91261353 A 19910913; JP 91109576 A 19910416

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
EP 509490	A2	E	20	G02F-001/1333	
Designated States (Regional): AT BE CH DE DK ES FR GB GR IT LI LU NL PT SE					
JP 5072536	A		7	G02F-001/1337	
US 5541752	A		17	G02F-001/141	Cont of application US 92868327

Abstract (Basic): EP 509490 A

The appts. includes a liquid crystal panel with a pair of substrates (41a,41b) and a chiral smectic liquid crystal (45) between them. The chiral smectic liquid crystal is free from its helical structure and is formed in a number of smectic layers each organised by liquid crystal molecules aligned in a pretilted direction with respect to the substrates. The smectic layers are inclined w.r.t. the substrates and arranged in a second direction.

A driver applies a voltage signal which causes one or other orientation state of the liquid crystal. An AC voltage not causing a transition from one orientation state to the other is applied to the liquid crystal. One of the pairs of substrates is provided with ridges which extend in parallel with the second direction and have a height which is at least one third of the spacing between the substrates.

ADVANTAGE - Uses chiral smectic liquid crystal which shows ferroelectricity.

Dwg.4/15
Abstract (Equivalent): US 5541752 A
A liquid crystal apparatus, comprising:
(a) a liquid crystal panel comprising a pair of substrates respectively provided with a group of parallel transparent stripe electrodes which are disposed to intersect each other with a spacing therebetween, and a chiral smectic liquid crystal disposed between the substrates, the chiral smectic liquid crystal being free from its helical structure and formed in a plurality of smectic layers each organized by plural liquid crystal molecules which are aligned in one of two stable states with a pretilt angle of at least 5 degrees with respect to the substrates, the smectic layers being inclined with respect to the substrates so as to form a clockwise dull angle with one of the substrates and a counterclockwise dull angle with the other of the substrates, thereby being bent between the substrates, the smectic layers being further aligned to have normals providing a common protection extending in one direction onto one of the substrates, and
(b) drive means for applying a voltage signal causing one or another orientation state of the chiral smectic liquid crystal and an AC voltage not causing a transition from said one to another or said another to one orientation state of the liquid crystal, said AC voltage causing movement of the liquid crystal molecules within the respective smectic layers,
wherein the transparent parallel stripe electrodes on one of said pair of substrates are respectively provided with a stripe conductor film contacting the stripe electrode and extending in a direction substantially parallel to said common projection so as to suppress the movement of liquid crystal molecules within the respective smectic layers.
[ECNEND]
Dwg.6/15

56/3,AB/8 (Item 6 from file: 350)
DIALOG(R)File 350:Derwent WPIX

009208129
WPI Acc No: 1992-335550/199241
XRPX Acc No: N93-215948
Image sensor including photodiode arrays aligned adjacent to one another for e.g. facsimile - aligns photodiodes along main **scanning** direction, **parallel** to each other, and perpendicular to sub-scanning direction with adjacent arrays having different potential levels
Patent Assignee: MITSUBISHI ELECTRIC CORP (MITQ); MITSUBISHI DENKI KK (MITQ)
Inventor: KANEDA O
Number of Countries: 002 Number of Patents: 002
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
JP 4239174	A	19920827	JP 9113998	A	19910111	199241	B
US 5241377	A	19930831	US 91793142	A	19911118	199336	

Priority Applications (No Type Date): JP 9113998 A 19910111
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
JP 4239174	A		11	H01L-027/148	
US 5241377	A		22	H04N-009/07	

Abstract (Basic): US 5241377 A

The image sensor includes a number of photodiode arrays, each array including a number of photodiodes. The arrays are **aligned** in **parallel** and closely arranged with at least two charge transfer devices disposed parallel to and on opposite sides of the photodiode arrays.

The clearance between the respective photodiode arrays can be reduced, and the charges generated by the photodiodes having shallower potential wells can be completely transferred at high speed.

USE/ADVANTAGE - Optical character recorder (OCR) compensates for clearances between respective photodiode arrays, provides small sized chip, capacitance of photodiode having large saturation output can be increased.

5a,5b,6a/1

5

Abstract (Equivalent): US 5241377 A

The image sensor includes a number of photodiode arrays, each array including a number of photodiodes. The arrays are **aligned** in **parallel** and closely arranged with at least two charge transfer devices disposed parallel to and on opposite sides of the photodiode arrays.

The clearance between the respective photodiode arrays can be reduced, and the charges generated by the photodiodes having shallower potential wells can be completely transferred at high speed.

USE/ADVANTAGE - Optical character recorder (OCR) compensates for clearances between respective photodiode arrays, provides small sized chip, capacitance of photodiode having large saturation output can be increased.

(5a,5b,6a/1 5

56/3,AB/9 (Item 7 from file: 350)

DIALOG(R)File 350:Derwent WPIX

008351266

WPI Acc No: 1990-238267/199031

XRPX Acc No: N90-184802

Integrated optical hybrid matrix switch with very low crosstalk - uses both 2 and 2 changeover switches and 2 and 2 shift switches allowing connection paths to by-pass each other

Patent Assignee: GTE LAB INC (SYLV)

Inventor: KOAI K T

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 4932735	A	19900612	US 89414980	A	19890929	199031	B

Priority Applications (No Type Date): US 89414980 A 19890929

Abstract (Basic): US 4932735 A

A stereoscopic view from two satellite or two aerial photographs (18, 19) of the same or overlapping area is obtained. The method involves aligning the photographs in a stereoscope (10) with the horizontal axis (16) of the stereoscope (10) **aligned** **parallel** to the flight path taken to produce the photographs or **parallel** to the **scan** direction employed by the satellite.

The photographs are produced on infra red film in the case of aerial photography or enhanced to accentuate red and infra red in the case of satellite photography. A series of photographs are produced

each with a desired colour balance. The photographs are cross compared in the stereoscope (10) to produce an enhanced stereoscope effect to enable detection and/or measurement of structures or effects.

USE - For detecting geological structures from aerial and satellite pictures. (11pp

56/3,AB/10 (Item 8 from file: 350)
DIALOG(R)File 350:Derwent WPIX

007535285
WPI Acc No: 1988-169217/198825
XRPX Acc No: N88-129410

Flat cathode ray tube for colour TV or terminal - has electron beams directed vertically across horizontally-disposed, vertical-scanning electrode strips arranged parallel to screen

Patent Assignee: MATSUSHITA ELEC IND CO LTD (MATU)
Inventor: KAWAUCHI Y; MIYAMA H; NISHIDA J; TOMII K

Number of Countries: 005 Number of Patents: 005
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
EP 271926	A	19880622	EP 87118851	A	19871218	198825 B
JP 63155535	A	19880628	JP 86304165	A	19861219	198831
US 4939413	A	19900703	US 87134662	A	19871218	199029
EP 271926	B1	19930310	EP 87118851	A	19871218	199310
DE 3784653	G	19930415	DE 3784653	A	19871218	199316
			EP 87118851	A	19871218	

Priority Applications (No Type Date): JP 86304165 A 19861219
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
EP 271926	A	E	19		
Designated States (Regional): DE FR GB					
EP 271926	B1	E	21	H01J-031/12	
Designated States (Regional): DE FR GB					
DE 3784653	G			H01J-031/12	Based on patent EP 271926

Abstract (Basic): EP 271926 A

The vertical scanning electrodes (13) are formed as a set of parallel horizontally-disposed strips arranged in a vertical plane which is disposed parallel with the vertically-disposed phosphor screen (21). The horizontal focusing and deflection electrodes (17,18,19) are disposed between the screen and the set of vertical scanning electrodes and are arranged in parallel vertical planes directed normally to the plane of the screen.

Electron-beam sources (10) are disposed between the vertical scanning electrodes and the horizontal focusing and deflection electrodes to emit electron beams in a vertical direction along the height of the set of vertical scanning electrodes. The respective electron beam is deflected through the aperture (16) of a respective shield electrode (15) to the screen, by controlling the potentials applied to the vertical scanning electrodes.

ADVANTAGE - Tube has small number of electrodes.

5/11

Abstract (Equivalent): EP 271926 B

Display device comprising a flat cathode ray tube with; a phosphor screen (21); a plurality of vertical scanning electrodes (13) which each have an oblong configuration in the horizontal direction and are separated from each other in the vertical direction, the plurality of

vertically separated scanning electrodes (13) forming a plane which is substantially parallel to said phosphor screen (21), said vertical scanning electrodes (13) being provided for vertically scanning electron beams (27) onto said phosphor screen (21) by changing potentials which are to be applied to said respective vertical scanning electrodes (13); a plurality of horizontal focusing and deflection electrode units (17, 17', 18, 18', 19, 19') which are disposed between said phosphor screen (21) and said vertical scanning electrodes (13) and are **aligned** in **parallel** with each other in the horizontal direction, for horizontally scanning and focusing electron beams (27) within respective predetermined ranges onto said phosphor screen (21); a plurality of electron beam emitting means (10) which are disposed between said vertical scanning electrodes (13) and said horizontal focusing and deflection electrode units (17, 17', 18, 18', 19, 19') in each space partitioned by adjacent two horizontal focusing and deflection electrodes (17, 17', 18, 18', 19, 19'), for emitting electron beams (27) in a substantially vertical direction in substantially parallel with said plane formed by said vertical scanning electrodes (13); and a vacuum enclosure (14, 22 and others) for enclosing the above-mentioned parts; characterised in that: each of said horizontal focusing and deflection electrode units is separated into plural opposing pairs of electrodes (17, 178', 18, 18'. 19, 19') in a travelling direction of electron beams (27), said plural opposing pairs of electrodes being insulated from each other and the display device comprises means to impress d.c. voltages different from each other to each of these pairs of electrodes for focusing and to superimpose the same deflection voltage to each of the pairs of opposing electrodes.

Abstract (Equivalent): US 4939413 A

The flat type cathode ray tube has a number of vertical scanning electrodes which have an oblong configuration in horizontal direction.

They are each isolated and lined-up in vertical direction to form a substantially parallel plane to the phosphor screen for vertically scanning electron beams onto a phosphor screen by changing applied potentials.

Horizontal focussing and deflection electrodes which are disposed between the phosphor screen and the vertical **scanning** electrode are **parallely** lined-up in horizontal direction for horizontally scanning and focussing electron beams within the predetermined ranges onto the phosphor screen. A number of electron beam emitting devices which are disposed between the vertical scanning electrodes and the horizontal focussing and deflection electrode in each space partitioned by parallely opposing disposition of the horizontal focussing and deflection electrode emit electron beams in substantially vertical direction along the vertical scanning electrode.

A vacuum enclosure encloses all the parts. USE - For colour TV or computer terminal display.

(19pp

63/3,AB/1 (Item 1 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

14094851 PMID: 11870846

Coupled microstrip line **transverse electromagnetic resonator** model for high-**field magnetic resonance imaging**.

Bogdanov G; Ludwig R

Department of Electrical and Computer Engineering, Worcester Polytechnic Institute, Worcester, Massachusetts 01609, USA.

Magnetic resonance in medicine - official journal of the Society of Magnetic Resonance in Medicine / Society of Magnetic Resonance in Medicine (United States) Mar 2002, 47 (3) p579-93, ISSN 0740-3194
Journal Code: 8505245
Publishing Model Print
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed

The performance modeling of **RF** resonators at high **magnetic fields** of 4.7 T and more requires a physical approach that goes beyond conventional lumped circuit concepts. The treatment of voltages and currents as variables in time and space leads to a coupled transmission line model, whereby the electric and **magnetic fields** are assumed static in planes orthogonal to the length of the **resonator**, but **wave** -like along its longitudinal axis. In this work a multiconductor transmission line (MTL) model is developed and successfully applied to analyze a 12-element unloaded and loaded microstrip line **transverse electromagnetic** (**TEM**) **resonator** coil for animal studies. The loading involves a homogeneous cylindrical dielectric insert of variable radius and length. This model formulation is capable of estimating the resonance spectrum, field distributions, and certain types of losses in the coil, while requiring only modest computational resources. The boundary element method is adopted to compute all relevant transmission line parameters needed to set up the transmission line matrices. Both the theoretical basis and its engineering implementation are discussed and the resulting model predictions are placed in context with measurements. A comparison between a conventional lumped circuit model and this distributed formulation is conducted, showing significant departures in the resonance response at higher frequencies. This MTL model is applied to simulate two small-bore animal systems: one of 7.5-cm inner diameter, tuned to 200 MHz (4.7 T for proton imaging), and one of 13.36-cm inner diameter, tuned to both 200 and 300 MHz (7 T). Copyright 2002 Wiley-Liss, Inc.

67/3,AB/1 (Item 1 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

15141203 PMID: 14706710
A dual **RF** resonator system for high-**field** functional **magnetic resonance imaging** of small animals.
Ludwig R; Bodgdanov G; King J; Allard A; Ferris C F
Center for Comparative Neuroimaging, Bioengineering Institute and Department of Electrical and Computer Engineering, Worcester Polytechnic Institute, Worcester, MA 01609, USA. ludwig@wpi.edu
Journal of neuroscience methods (Netherlands) Jan 30 2004, 132 (2) p125-35, ISSN 0165-0270 Journal Code: 7905558
Contract/Grant No.: R42 MH59501; MH; NIMH
Publishing Model Print
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed
A new apparatus has been developed that integrates an animal restrainer arrangement for small animals with an actively tunable/detunable dual **radio-frequency** (**RF**) **coil** system for in vivo anatomical and functional **magnetic resonance imaging** of small animals at 4.7 T. The **radio-frequency coil** features an eight-element microstrip line configuration that, in conjunction with a segmented outer copper shield, forms a **transversal electromagnetic** (**TEM**) **resonator** structure. Matching and active tuning/detuning is achieved through fixed/variable capacitors and a PIN diode for each resonator element. These components along with **radio-frequency** chokes (RFCs) and blocking capacitors are placed on two printed circuit boards (PCBs) whose copper coated ground planes form the front and back of the volume coil and are therefore an integral part of the resonator structure. The **magnetic resonance** signal response is received with a dome-shaped single-loop surface coil that can be height-adjustable with respect to the animal's head. The conscious animal is immobilized through a mechanical arrangement that consists of a Plexiglas body tube and a head restrainer. This restrainer has a cylindrical holder with a mouthpiece and position screws to receive and restrain the head of the animal. The apparatus is intended to perform anatomical and functional **magnetic resonance imaging** in conscious animals such as mice, rats, hamsters, and marmosets. Cranial images acquired from fully conscious rats in a 4.7 T Bruker 40 cm bore animal scanner underscore the feasibility of this approach and bode well to extend this system to the imaging of other animals.

67/3,AB/2 (Item 2 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

14380763 PMID: 12210952
Characterization and reduction of gradient-induced eddy currents in the **RF** shield of a **TEM** resonator.
Alecci Marcello; Jezzard Peter
Center for Functional Magnetic Resonance Imaging of the Brain, Department of Clinical Neurology, John Radcliffe Hospital, University of Oxford, UK.
Magnetic resonance in medicine - official journal of the Society of Magnetic Resonance in Medicine / Society of Magnetic Resonance in Medicine (United States) Aug 2002, 48 (2) p404-7, ISSN 0740-3194

Journal Code: 8505245
Publishing Model Print
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed
Radiofrequency (**RF**) shields that surround **MRI** transmit/receive coils should provide effective **RF** screening, without introducing unwanted eddy currents induced by gradient switching. Results are presented from a detailed examination of an effective **RF** shield design for a prototype **transverse electromagnetic** (**TEM**) **resonator** suitable for use at 3 Tesla. It was found that effective **RF** shielding and low eddy current sensitivity could be achieved by axial segmentation (gap width = 2.4 mm) of a relatively thick (35 microm) copper shield, etched on a kapton polyimide substrate. This design has two main advantages: first, it makes the **TEM** less sensitive to the external environment and **RF** interference; and second, it makes the **RF** shield mechanically robust and easy to handle and assemble. Copyright 2002 Wiley-Liss, Inc.

67/3,AB/3 (Item 3 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

14040333 PMID: 11804762
Effect of **RF coil** excitation on field inhomogeneity at ultra high fields: a field optimized **TEM** resonator.
Ibrahim T S; Lee R; Baertlein B A; Abduljalil A M; Zhu H; Robitaille P M
Department of Radiology, The Ohio State University, Columbus, Ohio 43210, USA.
Magnetic resonance imaging (United States) Dec 2001, 19 (10) p1339-47, ISSN 0730-725X Journal Code: 8214883
Contract/Grant No.: HL-45120; HL; NHLBI
Publishing Model Print
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed
In this work, computational methods were utilized to optimize the field produced by the **transverse electromagnetic** (**TEM**) **resonator** in the presence of the human head at 8 Tesla. Optimization was achieved through the use of the classical finite difference time domain (FDTD) method and a **TEM** resonator loaded with an anatomically detailed human head model with a resolution of 2 mm x 2 mm x 2 mm. The head model was developed from 3D **MR images**. To account for the electromagnetic interactions between the coil and the tissue, the coil and the head were treated as a single system at all the steps of the model including, numerical tuning and excitation. In addition to 2, 3, 4, 6, and 10-port excitations, an antenna array concept was utilized by driving all the possible ports (24) of a 24-strut **TEM** resonator. The results show that significant improvement in the circularly polarized component of the transverse **magnetic field** could be obtained when using multiple ports and variable phase and fixed magnitude, or variable phase and variable magnitude excitations.

67/3,AB/4 (Item 4 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

13933814 PMID: 11686274

Analysis of B1 field profiles and SAR values for multi-strut **transverse electromagnetic RF coils** in high field **MRI** applications.

Ibrahim T S; Abduljalil A M; Baertlein B A; Lee R; Robitaill P M

Department of Electrical Engineering, The Ohio State University, Columbus 43212, USA.

Physics in medicine and biology (England) Oct 2001, 46 (10) p2545-55, ISSN 0031-9155 Journal Code: 0401220

Publishing Model Print

Document type: Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: MEDLINE; Completed

In this work, the B1 field homogeneity and specific absorption rate (SAR) values were evaluated for three high-**frequency** (340 MHz) **radio frequency coils** designed for use in human **magnetic resonance imaging** at 8 tesla. Eight-, 16-, and 24-strut **transverse electromagnetic** (**TEM**) **resonators** were examined both experimentally and with the finite difference time domain numerical method. It was observed that increasing the number of **TEM** elements acted to lower the maximal achievable frequency of the coil and to increase the experimental complexities associated with tuning and matching. In addition, it is demonstrated from experiment and numerical analysis that the circularly polarized component of the B1 (B1+) field homogeneity in the head improved most from 8- to 16-strut coils. Numerical analysis revealed little difference in terms of SAR distribution between these coils; however, stronger tissue/coil coupling and consequently higher SAR peak values were obtained for the 8-strut case.

67/3,AB/5 (Item 5 from file: 155)

DIALOG(R)File 155:MEDLINE(R)

12737108 PMID: 10667650

Ultra high resolution imaging of the human head at 8 tesla: 2K x 2K for Y2K.

Robitaille P M; Abduljalil A M; Kangarlu A

Center for Advanced Biomedical Imaging, Department of Radiology, The Ohio State University, Columbus, USA.

Journal of computer assisted tomography (UNITED STATES) Jan-Feb 2000, 24 (1) p2-8, ISSN 0363-8715 Journal Code: 7703942

Publishing Model Print

Document type: Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: MEDLINE; Completed

PURPOSE: To acquire ultra high resolution **MRI** images of the human brain at 8 Tesla within a clinically acceptable time frame. METHOD: Gradient echo images were acquired from the human head of normal subjects using a **transverse electromagnetic resonator** operating in quadrature and tuned to 340 MHz. In each study, a group of six images was obtained containing a total of 208 MB of unprocessed information. Typical acquisition parameters were as follows: matrix = 2,000 x 2,000, field of view = 20 cm, slice thickness = 2 mm, number of excitations (NEX) = 1, flip angle = 45 degrees, TR = 750 ms, TE = 17 ms, receiver bandwidth = 69.4 kHz. This resulted in a total scan time of 23 minutes, an in-plane resolution of 100 microm, and a pixel volume of 0.02 mm3. RESULTS: The ultra high

resolution images acquired in this study represent more than a 50-fold increase in in-plane resolution relative to conventional 256 x 256 images obtained with a 20 cm field of view and a 5 mm slice thickness. Nonetheless, the ultra high resolution images could be acquired both with adequate image quality and signal to noise. They revealed numerous small venous structures throughout the image plane and provided reasonable delineation between gray and white matter. DISCUSSION: The elevated signal-to-noise ratio observed in ultra high **field magnetic resonance imaging** can be utilized to acquire images with a level of resolution approaching the histological level under in vivo conditions. However, brain motion is likely to degrade the useful resolution. This situation may be remedied in part with cardiac gating. Nonetheless, these images represent a significant advance in our ability to examine small anatomical features with noninvasive imaging methods.

67/3,AB/6 (Item 6 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

12667896 PMID: 10589562
Black body and **transverse electromagnetic resonators** operating at 340 MHz: volume **RF coils** for ultra high field **MRI**.
Robitaille P M
Center for Advanced Biomedical Imaging, Department of Radiology, Ohio State University, Columbus 43210, USA.
Journal of computer assisted tomography (UNITED STATES) Nov-Dec 1999, 23 (6) p879-90, ISSN 0363-8715 Journal Code: 7703942
Publishing Model Print
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed
PURPOSE: The purpose of this work was to describe the newly formulated black body (BB) resonator with historical perspective and to outline the construction and assembly of the **transverse electromagnetic** (**TEM**) **RF coil** for use in ultra high field **MRI** (UHFMRI) studies at 340 MHz. METHOD: **TEM** and BB resonators were machined from acrylic and Teflon tubing, copper foil, and brass connectors. Tuning was accomplished through adjustable **TEM** elements. Variable Teflon-based capacitors were utilized to provide matching to the 50 omega line. The **TEM** resonator operated in quadrature, and the BB resonator operated in linear mode. The final resonators were fully adjustable from 63 to 430 MHz. Quality (Q) values were measured using a network analyzer over this frequency range for the unloaded and loaded coils. Coil performance was also evaluated using gradient and spin echo imaging at 8 T. RESULTS: Both resonators yielded excellent images from mineral oil phantoms, with good homogeneity throughout the imaging volume. The BB resonator was characterized with enhanced signal-to-noise ratio and greatly reduced **RF** power requirements relative to the **TEM** resonator. Images obtained from the human head at 8 T with the **TEM** resonator were also excellent. Tuning remains a tedious process. CONCLUSION: The **TEM** resonator provides an excellent **RF coil** for imaging studies up to 340 MHz. Its homogeneity reliability remains to be improved. In part as a result of its inability to sustain radiative loses, the BB resonator has extremely low **RF** power requirements. The BB resonator may have important uses in limiting **RF** power requirements and enhancing signal-to-noise ratio at other frequencies. Larger slightly modified versions may also prove useful in human imaging, depending on tolerances

and final quality factors.

67/3,AB/7 (Item 7 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

12667893 PMID: 10589559
High resolution **MRI** of the deep brain vascular anatomy at 8 Tesla: susceptibility-based enhancement of the venous structures.
Christoforidis G A; Bourekas E C; Baujan M; Abduljalil A M; Kangarlu A; Spigos D G; Chakeres D W; Robitaille P M
Center for Advanced Biomedical Imaging, Department of Radiology, Ohio State University, Columbus 43210, USA.
Journal of computer assisted tomography (UNITED STATES) Nov-Dec 1999, 23 (6) p857-66, ISSN 0363-8715 Journal Code: 7703942
Publishing Model Print
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed
PURPOSE: The purpose of this work was to describe the deep vascular anatomy of the human brain using high resolution MR gradient echo imaging at 8 T. METHOD: Gradient echo images were acquired from the human head using a **transverse electromagnetic resonator** operating in quadrature and tuned to 340 MHz. Typical acquisition parameters were as follows: matrix = 1,024 x 1,024, flip angle = 45 degrees, TR = 750 ms, TE = 17 ms, FOV = 20 cm, slice thickness = 2 mm. This resulted in an in-plane resolution of approximately 200 microm. Images were analyzed, and vascular structures were identified on the basis of location and course. RESULTS: High resolution ultra high **field magnetic resonance imaging** (UHFMRI) enabled the visualization of many small vessels deep within the brain. These vessels were typically detected as signal voids, and the majority represented veins. The prevalence of the venous vasculature was attributed largely to the magnetic susceptibility of deoxyhemoglobin. It was possible to identify venous structures expected to measure below 100 microm in size. Perforating venous drainage within the deep gray structures was identified along with their parent vessels. The course of arterial perforators was more difficult to follow and not as readily identified as their venous counterparts. CONCLUSION: The application of high resolution gradient echo methods in UHFMRI provides a unique detailed view of particularly the deep venous vasculature of the human brain.

67/3,AB/8 (Item 8 from file: 155)
DIALOG(R)File 155:MEDLINE(R)

11969060 PMID: 9253046
Design and calibration of electric field probes in the range 10-120 MHz.
Taylor H C; Burl M; Hand J W
Radiological Sciences Unit, Hammersmith Hospital, London, UK.
Physics in medicine and biology (ENGLAND) Jul 1997, 42 (7) p1387-94, ISSN 0031-9155 Journal Code: 0401220
Publishing Model Print
Document type: Journal Article
Languages: ENGLISH
Main Citation Owner: NLM
Record type: MEDLINE; Completed

In view of potential thermal hazards, there is a need to determine the specific absorption rate (SAR) distributions associated with **radiofrequency coils** used in **magnetic resonance imaging** (**MRI**) (typically 10-120 MHz). Electric field (E-field) distributions in tissue-equivalent phantoms may be determined using a probe comprising a dipole antenna and a detector. The geometry of the dipole dictates the sensitivity of the device, thus two designs are discussed in this paper. Both probes are compact, have a spatial resolution of 2.5 cm3, operate at MR frequencies and have a response independent of the dielectric characteristics of the phantom material. Calibration of these probes requires a system capable of producing a known E-field both in air and in a tissue-like medium at frequencies between 10 and 120 MHz. **Transverse electromagnetic wave** (**TEM**) cells answering these specifications are described and the calibration procedure outlined. Accurately calibrated E-field probes can make field measurements in phantoms which can be used to verify predictions from numerical models. These numerical techniques may then be used to predict E-fields, and hence SAR, in patients.

67/3,AB/9 (Item 1 from file: 2)
DIALOG(R)File 2:INSPEC

7257708 INSPEC Abstract Number: A2002-12-8760I-005, B2002-06-7510N-025
Title: Authors' reply [to comments on "Theoretical model for an **MRI radio frequency** resonator"]
Author(s): Baertlein, B.A.; Ozbay, O.; Ibrahim, T.; Lee, R.; Zhang, X.; Yu, Y.; Kangarlu, A.; Robitaille, P.-M.L.
Author Affiliation: Dept. of Electr. Eng., Ohio State Univ., Columbus, OH, USA
Journal: IEEE Transactions on Biomedical Engineering vol.49, no.5 p.496
Publisher: IEEE,
Publication Date: May 2002 Country of Publication: USA
CODEN: IEBEAX ISSN: 0018-9294
SICI: 0018-9294(200205)49:5L.496:ARCT;1-R
Material Identity Number: I050-2002-005
U.S. Copyright Clearance Center Code: 0018-9294/02/$17.00
Language: English
Abstract: The authors thank the commentors for their remarks (see De Zanche et al., ibid., vol.49, p.494, 2002) and for the opportunity to clarify and correct some statements in the subject paper (see ibid., vol.47, p.535, 2000). The principal issue raised by De Zanche deals with a remark that appears the in original paper which seems to suggest that maxima of E and maxima of H are coincident in a **transverse electromagnetic** (**TEM**) **resonator**. The analysis presented in the original makes it clear that this cannot occur. The periodic nature of the **TEM** resonator fields is relevant to high-field coil design.
Subfile: A B

67/3,AB/10 (Item 2 from file: 2)
DIALOG(R)File 2:INSPEC

7257707 INSPEC Abstract Number: A2002-12-8760I-004, B2002-06-7510N-024
Title: Comments on "Theoretical model for an **MRI radio frequency** resonator"

Author(s): De Zanche, N.; Vermeulen, F.E.; Allen, P.S.
Author Affiliation: Dept. of Biomed. Eng., Alberta Univ., Edmonton, Alta., Canada
Journal: IEEE Transactions on Biomedical Engineering vol.49, no.5 p.495
Publisher: IEEE,
Publication Date: May 2002 Country of Publication: USA
CODEN: IEBEAX ISSN: 0018-9294
SICI: 0018-9294(200205)49:5L.495:CTMR;1-V
Material Identity Number: I050-2002-005
U.S. Copyright Clearance Center Code: 0018-9294/02/$17.00
Language: English
Abstract: In contrast to a previous report [Baertlein et al., ibid., vol.47, p.535 (2000)], the **transverse electromagnetic resonator** used in **magnetic resonance imaging** is shown to be similar to the high-pass "birdcage" resonator in having an electric field minimum in correspondence with the maximum of the **magnetic field** . The noise performance of each resonator will, in consequence, be comparable, since at high frequencies patient conductive losses are predominant.
Subfile: A B

? T S67/3,AB/11-27
>>>No matching display code(s) found in file(s): 65

67/3,AB/11 (Item 3 from file: 2)
DIALOG(R)File 2:INSPEC

6572943 INSPEC Abstract Number: A2000-11-8760I-008, B2000-06-7510N-006
Title: Ultra high resolution imaging of the human head at 8 Tesla: 2K*2K for Y2K
Author(s): Robitaille, P.-M.L.; Abduljalil, A.M.; Kangarlu, A.
Author Affiliation: Dept. of Radiol., Ohio State Univ., Columbus, OH, USA
Journal: Journal of Computer Assisted Tomography vol.24, no.1 p.2-8
Publisher: Lippincott Williams & Wilkins,
Publication Date: Jan.-Feb. 2000 Country of Publication: USA
CODEN: JCATD5 ISSN: 0363-8715
SICI: 0363-8715(200001/02)24:1L.2:UHRI;1-K
Material Identity Number: A942-2000-002
Language: English
Abstract: The authors' purpose was to acquire ultra high resolution **MRI** images of the human brain at 8 Tesla within a clinically acceptable time frame. Gradient echo images were acquired from the human head of normal subjects using a **transverse electromagnetic resonator** operating in quadrature and tuned to 340 MHz. In each study, a group of six images was obtained containing a total of 208 MB of unprocessed information. Typical acquisition parameters were as follows: matrix=2000*2000, field of view=20 cm, slice thickness=2 mm, number of excitations (NEX)=1, flip angle=45 degrees , TR=750 ms, TE=7 ms, receiver bandwidth=69.4 kHz. This resulted in a total scan time of 23 minutes, an in-plane resolution of 100 mu m, and a pixel volume of 0.02 mm/sup 3/. The ultra high resolution images acquired in this study represent more than a 50-fold increase in in-plane resolution relative to conventional 256*256 images obtained with a 20 cm field of view and a 5 mm slice thickness. Nonetheless, the ultra high resolution images could be acquired both with adequate image quality and signal to noise. They revealed numerous small venous structures throughout the image plane and provided reasonable delineation between gray and white matter. The elevated signal-to-noise ratio observed in ultra high **field magnetic resonance**

imaging can be utilized to acquire images with a level of resolution approaching the histological level under in vivo conditions. However, brain motion is likely to degrade the useful resolution. This situation may be remedied in part with cardiac gating. Nonetheless, these images represent a significant advance in our ability to examine small anatomical features with noninvasive imaging methods.
Subfile: A B

67/3,AB/12 (Item 4 from file: 2)
DIALOG(R)File 2:INSPEC

6531144 INSPEC Abstract Number: A2000-08-8760I-016, B2000-04-7510N-081
Title: Dielectric resonance phenomena in ultra high field **MRI**
Author(s): Kangarlu, A.; Baertlein, B.A.; Lee, R.; Ibrahim, T.; Lining Yang; Abduljalil, A.M.; Robitaille, P.M.L.
Author Affiliation: Dept. of Radiol., Ohio State Univ., Columbus, OH, USA
Journal: Journal of Computer Assisted Tomography vol.23, no.6 p. 821-31
Publisher: Lippincott Williams & Wilkins,
Publication Date: Nov.-Dec. 1999 Country of Publication: USA
CODEN: JCATD5 ISSN: 0363-8715
SICI: 0363-8715(199911/12)23:6L.821:DRPU;1-J
Material Identity Number: A942-1999-006
Language: English
Abstract: Dielectric resonances have previously been advanced as a significant cause of image degradation at higher fields. In this work, a study of dielectric resonances in ultra high field **MRI** is presented to explore the real importance of dielectric resonances in the human brain in this setting. Gradient-recalled echo images were acquired using a **transverse electromagnetic resonator** at 1.5, 4.7, and 8 T. Images were obtained from the human head and from phantoms filled with pure water, saline, and mineral oil. In addition, an exact theoretical analysis of dielectric resonances is presented for a spherical phantom and for a model of the human head. Theoretical results demonstrate that distilled water can sustain dielectric resonances in head-sized spheres near 200 and 360 MHz, but the presence of significant conductivity suppresses these resonances. These findings are confirmed experimentally with proton images of water and saline (0.05 and 0.125 M NaCl). For lossy phantoms, coupling between the source and phantom overwhelms the dielectric resonance. Because of their low relative permittivity, mineral oil phantoms with 20 cm diameter do not exhibit dielectric resonances below ~900 MHz. Significant dielectric resonances were not observed in human head images obtained at 1.5, 4.7, and 8 T. In conclusion, it appears that dielectric resonances do not have any real importance in determining image quality for MR studies of the human head. It is advanced that **RF coils** are much more likely to be the source of any inhomogeneity.
Subfile: A B

67/3,AB/13 (Item 5 from file: 2)
DIALOG(R)File 2:INSPEC

01249819 INSPEC Abstract Number: A78078733
Title: Nuclear double resonance by longitudinal detection
Author(s): Giordano, M.; Ranier, G.

Author Affiliation: Istituto di Chimica Fisica, Venezia, Italy
Journal: Journal of Magnetic Resonance vol.30, no.1 p.27-32
Publication Date: April 1978 Country of Publication: USA
CODEN: JOMRA4 ISSN: 0022-2364
Language: English
Abstract: A nuclear spin-/sup 1///sub 2/ system in a static **magnetic field** H/sub 0/ has been irradiated by two **electromagnetic transverse waves** with frequencies v/sub r/ and v/sub s/ near the Larmor frequency. The oscillating longitudinal magnetization signal of such a system has been detected, and the dependence of the phase of the signal on mod v/sub r/-v/sub s/ mod and on H/sub 0/ has been studied both theoretically and experimentally.
Subfile: A

67/3,AB/14 (Item 6 from file: 2)
DIALOG(R)File 2:INSPEC

00196206 INSPEC Abstract Number: A70076244
Title: Acoustic dipole and quadrupole saturation of Li/sup 7/ n.m.r. signals in lithium niobate
Author(s): Antokol'skii, G.L.; Sarnatskii, V.M.; Shutilov, V.A.
Journal: Fizika Tverdogo Tela vol.12, no.8 p.2291-4
Publication Date: Aug. 1970 Country of Publication: USSR
CODEN: FTVTAC ISSN: 0367-3294
Translated in: Soviet Physics - Solid State
Country of Publication: USA
CODEN: SPSSA7 ISSN: 0038-5654
Language: Russian
Abstract: An experimental investigation was made of the dipole saturation of nuclear levels due to interaction between the magnetic moments of nuclei and an **electromagnetic wave** which accompanies a suitably oriented and polarized ultrasonic wave. This effect was investigated in piezoelectric crystals of LiNbO/sub 3/. It was found that all three components of the n.m.r. spectrum of Li/sup 7/ were saturated at room temperature by a **transverse** ultrasonic **wave** of frequency corresponding to the transitions Delta m=+or-1, where m is the magnetic quantum number. When the plane of polarization of the ultrasonic wave was rotated relative to the external **magnetic field** by an angle pi /2, the dipole saturation effect disappeared and only the quadrupole saturation of the satellites remained.
Subfile: A

67/3,AB/15 (Item 1 from file: 8)
DIALOG(R)File 8:Ei Compendex(R)

06716898
E.I. No: EIP04078016863
Title: Polarization adjustment of incident **electromagnetic waves** for optimal mode-conversion to electron Bernstein waves
Author: Igami, H.; Uchida, M.; Tanaka, H.; Maekawa, T.
Corporate Source: Graduate School of Energy Science Kyoto University, Sakyo-ku, Kyoto 606-8502, Japan
Source: Plasma Physics and Controlled Fusion v 46 n 1 January 2004. p 261-275
Publication Year: 2004
CODEN: PLPHBZ ISSN: 0741-3335

Language: English
Abstract: Polarization adjustment of incident **transverse electromagnetic waves** for optimal mode-conversion to electron Bernstein waves is proposed and analysed. The optimized wave injection excites most efficiently the electrostatic waves at the upper hybrid resonance (UHR) layer. Polarization adjustment is effective for the intermediate range of density gradient near the UHR layer, which has not been covered by the previously proposed schemes of perpendicular injection of X mode for the extremely steep density gradient case and oblique injection of O mode at the optimal injection angle for the gentle gradient case. Various methods of experimental polarization adjustment without detailed information on the density profile are proposed and discussed. 17 Refs.

67/3,AB/16 (Item 2 from file: 8)
DIALOG(R)File 8:Ei Compendex(R)

06037811
E.I. No: EIP02166918719
Title: Non-linear magnetoacoustic wave instability in the range of resonance magnetoacoustic interaction
Author: Bugaev, A.S.; Gorsky, V.B.
Corporate Source: Moscow Inst. of Physics and Technol., Dolgoprudny, Moscow, Russian Federation
Conference Title: 2001 Ultrasonics Symposium
Conference Location: Atlanta, GA, United States Conference Date: 20011006-20011010
E.I. Conference No.: 59103
Source: Proceedings of the IEEE Ultrasonics Symposium v 1 2001. p 455-458 (IEEE cat n 01ch37263)
Publication Year: 2001
CODEN: PIEUEZ ISSN: 1051-0117
Language: English
Abstract: Non-linear characteristics of the magnetostatic mode spectrum of disks resonators was studied. The nonlinearity threshold oscillation was observed experimentally for dipole magnetostatic oscillations exciting in the range of frequencies and **magnetic fields** where resonant interaction of spin-**wave** modes with **transversal** acoustic modes takes place. The 8-12 dB threshold decrease was observed at this circumstances for magnetoacoustic modes. (Edited abstract) 3 Refs.

67/3,AB/17 (Item 3 from file: 8)
DIALOG(R)File 8:Ei Compendex(R)

05918118
E.I. No: EIP01436699592
Title: Calculations of EM interactions with biological tissue: **Magnetic resonance imaging** at ultra high field
Author: Ibrahim, T.S.; Lee, R.; Baertlein, B.A.; Abduljalil, A.; Robitaille, P.-M.L.
Corporate Source: Ohio State University Dept. of Electrical Engineering, Columbus, OH 43210, United States
Source: Applied Computational Electromagnetics Society Journal v 16 n 2 July 2001. p 138-144
Publication Year: 2001
CODEN: JCSOED ISSN: 1054-4887

Language: English
Abstract: A finite difference time domain model is developed to simulate a **TEM** resonator for high frequency clinical **magnetic resonance imaging** applications. The coil-head electromagnetic interactions and their effects on the SAR in biological tissue are presented. The **TEM** resonator and the newly developed 18-tissue anatomically detailed human head model are treated together as a single system. This is done through all the steps of the model including excitation and numerical tuning. The treatment of the resonator and the head as a single system and the geometrical modeling of all the coil components including coaxial rods, shield, circular rings, and the excitation source(s), accurately account for the electromagnetic interactions between the coil and the tissue. As a result, close agreement was achieved between the FDTD results and **MRI** images obtained at 8 Tesla. 12 Refs.

67/3,AB/18 (Item 1 from file: 73)
DIALOG(R)File 73:EMBASE

11358664 EMBASE No: 2001373019
Analysis of BSUB1 field profiles and SAR values for multi-strut **transverse electromagnetic RF coils** in high field **MRI** applications
Ibrahim T.S.; Abduljalil A.M.; Baertlein B.A.; Lee R.; Robitaille P.-M.-L.
P.-M.-L. Robitaille, MRI Facility, The Ohio State University, 1630 Upham Drive, Columbus, OH 43210 United States
AUTHOR EMAIL: robitaille.1@osu.edu
Physics in Medicine and Biology (PHYS. MED. BIOL.) (United Kingdom) 2001, 46/10 (2545-2555)
CODEN: PHMBA ISSN: 0031-9155
DOCUMENT TYPE: Journal ; Article
LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH
NUMBER OF REFERENCES: 30

In this work, the BSUB1 field homogeneity and specific absorption rate (SAR) values were evaluated for three high-**frequency** (340 MHz) **radio frequency coils** designed for use in human **magnetic resonance imaging** at 8 tesla. Eight-, 16-, and 24-strut **transverse electromagnetic** (**TEM**) **resonators** were examined both experimentally and with the finite difference time domain numerical method. It was observed that increasing the number of **TEM** elements acted to lower the maximal achievable frequency of the coil and to increase the experimental complexities associated with tuning and matching. In addition, it is demonstrated from experiment and numerical analysis that the circularly polarized component of the BSUB1 (BSUB1SUP+) field homogeneity in the head improved most from 8- to 16-strut coils. Numerical analysis revealed little difference in terms of SAR distribution between these coils; however, stronger tissue/coil coupling and consequently higher SAR peak values were obtained for the 8-strut case.

67/3,AB/19 (Item 2 from file: 73)
DIALOG(R)File 73:EMBASE

05705183 EMBASE No: 1994122807

Permeability of the blood-brain barrier induced by 915 MHz **electromagnetic** radiation, continuous **wave** and modulated at 8, 16, 50, and 200 Hz

Salford L.G.; Brun A.; Sturesson K.; Eberhardt J.L.; Persson B.R.R.
Department of Neurosurgery, Lund University Hospital,S-221 85 Lund Sweden

Microscopy Research and Technique (MICROSC. RES. TECH.) (United States) 1994, 27/6 (535-542)
CODEN: MRTEE ISSN: 1059-910X
DOCUMENT TYPE: Journal; Article
LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

Biological effects of electromagnetic fields (EMF) on the blood-brain barrier (BBB) can be studied in sensitive and specific models. In a previous investigation of the permeability of the blood-brain barrier after exposure to the various EMF-components of **proton magnetic resonance imaging** (**MRI**), we found that the exposure to **MRI** induced leakage of Evans Blue labeled proteins normally not passing the BBB of rats (Salford et al. (1992), in: Resonance Phenomena in Biology, Oxford University Press, pp. 87-91). In the present investigation we exposed male and female Fischer 344 rats in a **transverse electromagnetic** transmission line chamber to microwaves of 915 MHz as continuous wave (CW) and pulse-modulated with repetition rates of 8, 16, 50, and 200 ssup -sup 1. The specific energy absorption rate (SAR) varied between 0.016 and 5 W/kg. The rats were not anesthetized during the 2-hour exposure. All animals were sacrificed by perfusion-fixation of the brains under chloral hydrate anesthesia about 1 hour after the exposure. The brains were perfused with saline for 3-4 minutes, and thereafter fixed in 4% formaldehyde for 5-6 minutes. Central coronal sections of the brains were dehydrated and embedded in paraffin and sectioned at 5 mum. Albumin and fibrinogen were demonstrated immunohistochemically. The results show albumin leakage in 5 of 62 of the controls and in 56 of 184 of the animals exposed to 915 MHz microwaves. Continuous wave resulted in 14 positive findings of 35, which differ significantly from the controls (P = 0.002). With pulsed 915 MHz microwaves with repetition rates of 200, 50, 16, and 8 ssup -sup 1, 42 of 149 were positive, which is highly significant at the P = 0.001 level. This reveals that both CW and pulsed 915 MHz microwaves have the potential to open up the BBB for albumin passage. However, there is no significant difference between continuous and pulsed 915 MHz microwaves in this respect. The frequency of occurrence of extravasates (26%) was found to be independent of SAR for SAR < 2.5 W/kg, but rose significantly for the higher SAR values (to 43%). The question of whether the opening of the blood-brain barrier constitutes a health hazard demands further investigation.

04592139 JICST ACCESSION NUMBER: 00A0120359 FILE SEGMENT: JICST-E
Optical Interactions with Microwaves in Microstrip Lines on YIG Thin Film Substrate.
TSUTSUMI MAKOTO (1); KIKUI KAZUHIKO (1); UEDA TETSUYA (1); DANA S K (1)
(1) Kyoto Inst. of Technol., Fac. of Eng. and Des.
Denshi Joho Tsushin Gakkai Gijutsu Kenkyu Hokoku(IEIC Technical Report (Institute of Electronics, Information and Communication Enginners), 1999, VOL.99,NO.464(OPE99 80-89), PAGE.13-18, FIG.11, REF.8
JOURNAL NUMBER: S0532BBG
UNIVERSAL DECIMAL CLASSIFICATION: 681.7.068:535.3 681.7:621.376

LANGUAGE: Japanese COUNTRY OF PUBLICATION: Japan
DOCUMENT TYPE: Journal
ARTICLE TYPE: Original paper
MEDIA TYPE: Printed Publication
ABSTRACT: This paper discusses optical interactions with magnetostatic waves propagating along microstrip and slot lines on the yttrium iron garnet(YIG) substrate both theoretically and experimentally. After estimating the dispersion curve of the stripline it shows the mixed status of quasi-**TEM** and magnetostatic forward volume wave modes through coupling between their two modes near **magnetic resonance** frequency. The experiments in optical interaction were carried out using 100Mm thick YIG film and laser beam of 1.3Mm wavelength, which was illuminated at a edge of YIG film. The modulation index of few percent due to interaction were observed at frequency of 3.2GHz along with magnetic wall oscilation effect by quasi-**TEM** mode. Their results were compared to the coupled mode theory. The application of the devices is also briefly discussed. (author abst.)

67/3,AB/21 (Item 2 from file: 94)
DIALOG(R)File 94:JICST-EPlus

03143171 JICST ACCESSION NUMBER: 97A0447507 FILE SEGMENT: JICST-E
Structure and Giant Magneto-Optical Effect of MnSbPt Films.
SAITO SHIN (1); WATANABE MAKOTO (1); SHOJI HIROKI (1); TAKAHASHI MIGAKU (1)
(1) Tohoku University, Faculty of English
Nippon Oyo Jiki Gakkaishi(Journal of the Magnetics Society of Japan), 1997
, VOL.21,NO.4-2, PAGE.345-348, FIG.6, REF.7
JOURNAL NUMBER: Z0944AAE ISSN NO: 0285-0192
UNIVERSAL DECIMAL CLASSIFICATION: 535.097/.098
LANGUAGE: Japanese COUNTRY OF PUBLICATION: Japan
DOCUMENT TYPE: Journal
ARTICLE TYPE: Original paper
MEDIA TYPE: Printed Publication
ABSTRACT: MnSbPt films containing 50at%Mn, 44at%Sb, and 6at%Pt were prepared by **RF** sputtering. XRD,**TEM**, and **NMR** studies revealed that in the as-deposited state, MnSbPt films had a disordered hexagonal structure, and that after annealing at 300.DEG.C. a NiAs-type structure and an fcc-type structure were formed, promoting phase separation in MnSbPt films with a giant magneto-optical Kerr rotation. The assumption of a two-phase mixture of NiAs and fcc structures is difficult to explain the giant magneto-optical effect in the short wevelength region (-500nm) for MnSbPt films. The giant magneto-optical effect is thought to be associated with the microstructure due to the phase separation process. (author abst.)

67/3,AB/22 (Item 1 from file: 144)
DIALOG(R)File 144:Pascal

14538449 PASCAL Number: 00-0203204
Theoretical model for an **MRI radio frequency** resonator
BAERTLEIN B A; OZBAY O; IBRAHIM T; LEE R; YING YU; KANGARLU A; ROBITAILLE P M L
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Electrical Engineering, 1320 Kinnear Road, Columbus, OH 43212, United States; ElectroScience Laboratory, Department of Electrical Engineering, Columbus, OH 43212, United States; The Ohio State University, Center for Advanced Biological Imaging, Department of Radiology, Columbus, OH, 43210, United States

Journal: IEEE transactions on biomedical engineering, 2000, 47 (4) 535-546

Language: English

A theoretical model is described for a **magnetic resonance imaging** (**MRI**) **radio-frequency** resonator (an **MRI** "coil") that is useful at ultrahigh frequencies. The device is a "**TEM** resonator," which is based on a concept originally proposed by Roeschmann (1988), The coil comprises a circular cavity-like structure containing several coaxial transmission lines operating in a **transverse electromagnetic** (**TEM**) mode. The model developed herein treats the empty coil and is based on multiconductor transmission line theory. This work generalizes and extends similiar analyses of the device by Roeschmann (1995) and Chingas and Zhang (1996). The model employs explicit calculation of per-unit-length parameters for **TEM** lines having arbitrary geometries. Calculations of the resonator's frequency response are found to compare well with measurements. Fields produced by linear (single-point) and quadrature drive are also computed and compared to images of low-permittivity phantoms.

67/3,AB/23 (Item 1 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

11585883 Genuine Article#: 670MK Number of References: 23
Title: Analysis of high-field **RF coils** using the method of lines (ABSTRACT AVAILABLE)
Author(s): Bodganov G; Ludwig R (REPRINT)
Corporate Source: Worcester Polytech Inst,Bioengn Inst,Worcester//MA/01609 (REPRINT); Worcester Polytech Inst,Bioengn Inst,Worcester//MA/01609; Worcester Polytech Inst,Dept Elect & Comp Engn,Worcester//MA/01609
Journal: CONCEPTS IN MAGNETIC RESONANCE PART B-MAGNETIC RESONANCE ENGINEERING, 2003, V16B, N1 (JAN), P22-37
ISSN: 1043-7347 Publication date: 20030100
Publisher: JOHN WILEY & SONS INC, 111 RIVER ST, HOBOKEN, NJ 07030 USA
Language: English Document Type: ARTICLE
Abstract: The method of lines is described as a novel and powerful way to analyze **radio frequency** (**RF**) **coils** for high-held **magnetic resonance imaging**. Originally developed for optical and microwave circuits, this method enables a full-wave solution to Maxwell's field equations without the computational burden of pure finite element or finite difference methods. Because only two of the three geometric dimensions are discretized, while seeking an analytic solution in the remaining space dimension, an efficient solution can be obtained at reasonable geometric restrictions. After outlining the theoretical formulation and the computer implementation of this technique, we will apply it to the modeling of microstrip **RF transverse electromagnetic resonator** coils at 200 and 400 MHz as well as a high-pass shielded birdcage resonator and a single-loop surface coil. With single-frequency solutions obtainable within 5-10 s on a personal computer, the approach proves highly suitable as a design tool and for rapid prototyping. (C) 2003 Wiley Periodicals, Inc.

67/3,AB/24 (Item 2 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

08220786 Genuine Article#: 259JD Number of References: 54
Title: High resolution **MRI** of the deep gray nuclei at 8 tesla (ABSTRACT AVAILABLE)
Author(s): Bourekas EC; Christofoidis GA; Abduljalil AM; Kangarlu A; Chakeres DW; Spigos DG; Robitaille PML (REPRINT)
Corporate Source: OHIO STATE UNIV,MRI FACIL, DEPT RADIOL, CTR ADV BIOMED IMAGING, 1630 UPHAM DR/COLUMBUS//OH/43210 (REPRINT); OHIO STATE UNIV,MRI FACIL, DEPT RADIOL, CTR ADV BIOMED IMAGING/COLUMBUS//OH/43210
Journal: JOURNAL OF COMPUTER ASSISTED TOMOGRAPHY, 1999, V23, N6 (NOV-DEC) , P867-874
ISSN: 0363-8715 Publication date: 19991100
Publisher: LIPPINCOTT WILLIAMS & WILKINS, 227 EAST WASHINGTON SQ, PHILADELPHIA, PA 19106
Language: English Document Type: ARTICLE
Abstract: Purpose: High resolution **MR images** obtained from a normal human volunteer at 8 T are utilized to describe the appearance of iron-containing deep gray nuclei at this field strength.

Method: High resolution (1,024 x 1,024 matrix) near-axial gradient echo images of the deep gray nuclei were acquired on a human volunteer by using an 8 T scanner. The images were acquired using a **transverse electromagnetic resonator** operating in quadrature. The following parameters were utilized: TR = 750 ms, TE = 17 ms, flip angle = 45 degrees, receiver bandwidth = 50 kHz, slice thickness = 2 mm, FOV = 20 cm. The 8 T images were reviewed and correlated to the known anatomy of the deep nuclei by comparing them with images observed at lower field strength, published diagrams, and histologic sections. In addition, the appearance of the nuclei was related to the known imaging characteristics of brain iron at lower fields.

Results: The caudate, globus pallidus, putamen, thalami, substantia nigra, and red nuclei were clearly identified. The structures with the highest levels of iron, the globus pallidus, substantia nigra, and red nuclei, demonstrated significantly decreased signal, providing a map of iron distribution in the human brain.

Conclusion: Preliminary imaging at 8 T demonstrates the ability to acquire ultra high resolution images of the deep nuclei, with signal characteristics believed to represent the distribution of brain iron. This may prove to be important in the early diagnosis of several neurodegenerative disorders.

67/3,AB/25 (Item 3 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

06306900 Genuine Article#: YH250 Number of References: 22
Title: On the SAR and field inhomogeneity of birdcage coils loaded with the human head (ABSTRACT AVAILABLE)
Author(s): Jin JM (REPRINT) ; Chen J
Corporate Source: UNIV ILLINOIS,DEPT ELECT & COMP ENGN, MAGNET RESONANCE ENGN LAB, 1406 W GREEN ST/URBANA//IL/61801 (REPRINT); UNIV

ILLINOIS,DEPT ELECT & COMP ENGN, ELECTROMAGNET LAB/URBANA//IL/61801
Journal: MAGNETIC RESONANCE IN MEDICINE, 1997, V38, N6 (DEC), P953-963
ISSN: 0740-3194 Publication date: 19971200
Publisher: WILLIAMS & WILKINS, 351 WEST CAMDEN ST, BALTIMORE, MD 21201-2436
Language: English Document Type: ARTICLE
Abstract: Birdcage coils are widely used as a **radiofrequency** (**RF**) resonator in **magnetic resonance imaging** (**MRI**) because of their capability to produce a highly homogeneous B-1 field over a large volume within the coil, When they are employed for high-frequency **MRI**, the interaction between the electromagnetic field and the object to be imaged deteriorates the B-1-field homogeneity and increases the specific absorption rate (SAR) in the object, To investigate this problem, a finite-element method (FEM) is developed to analyze the SAR and the B-1 field in a two-dimensional (2D) model of a birdcage coil loaded with a 2D model of a human head, The electric **field**, **magnetic field**, and SAR distributions are shown, and a comprehensive study is carried out for both linear and quadrature birdcage coils at 64, 128, 171, and 256 MHz, It is shown that to generate the same value of the B-1 field, the SAR is increased significantly with the frequency, and for the same imaging method the SAR produced by a quadrature coil is significantly lower than that of a linear coil, It is also shown that the B-1-field inhomogeneity is increased significantly with the frequency.

67/3,AB/26 (Item 1 from file: 350)
DIALOG(R)File 350:Derwent WPIX

014172212
WPI Acc No: 2001-656440/200175
XRPX Acc No: N01-489334
Transverse electromagnetic mode **resonator radio frequency coil** for **magnetic resonance imaging** apparatus, has cylindrical tube that has conducting patterns at each ring segment which are interconnected by capacitors
Patent Assignee: GE MEDICAL SYSTEMS GLOBAL TECHNOLOGY CO (GENE); NABETANI A (NABE-I)
Inventor: NABETANI A
Number of Countries: 023 Number of Patents: 008
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
US 20010028222	A1	20011011	US 2001798868	A	20010301	200175	B
JP 2001276015	A	20011009	JP 200093833	A	20000330	200175	
WO 200175468	A1	20011011	WO 2001US8449	A	20010316	200175	
KR 2002026281	A	20020409	KR 2001715450	A	20011130	200267	
EP 1272865	A1	20030108	EP 2001918757	A	20010316	200311	
			WO 2001US8449	A	20010316		
US 6618610	B2	20030909	US 2001798868	A	20010301	200361	
JP 2003305022	A	20031028	JP 200093833	A	20000330	200371	
			JP 2003107392	A	20000330		
JP 3516631	B2	20040405	JP 200093833	A	20000330	200424	

Priority Applications (No Type Date): JP 200093833 A 20000330; JP 2003107392 A 20000330
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20010028222	A1		23	H01J-025/00	
JP 2001276015	A		14	A61B-005/055	
WO 200175468	A1	E		G01R-033/34	

Designated States (National): KR
Designated States (Regional): AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR
KR 2002026281 A A61B-005/055
EP 1272865 A1 E G01R-033/34 Based on patent WO 200175468
Designated States (Regional): AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR
US 6618610 B2 A61B-005/05
JP 2003305022 A 13 A61B-005/055 Div ex application JP 200093833
JP 3516631 B2 13 A61B-005/055 Previous Publ. patent JP 2001276015

Abstract (Basic): US 20010028222 A1
Abstract (Basic):

NOVELTY - The cylindrical tube (110) has orifices (112,112') at both ends. The tube and orifices have insulator elements covered with conductive foil at equivalent portions. The line segments (118) are formed in parallel with the axis on the inner side of tube. Each ring segment of tube has conducting patterns that are connected by the capacitors.

DETAILED DESCRIPTION - The ring segments are obtained by dividing the tube by the slits. An INDEPENDENT CLAIM is also included for **magnetic resonance** (**MR**) **imaging** apparatus.

USE - For **magnetic resonance** (**MR**) **imaging** apparatus (claimed).

ADVANTAGE - Improves operating characteristic of **RF coil**. Simplifies insertion/removal of object by maintaining uniformity of circuits between segments.

DESCRIPTION OF DRAWING(S) - The figure shows the explanatory drawing of **RF coil**.

Cylindrical tube (110)
Orifices (112,112')
Line segments (118)
pp; 23 DwgNo 7/17

67/3,AB/27 (Item 1 from file: 347)
DIALOG(R)File 347:JAPIO

07810870
RF COIL, SHIELD AND **MAGNETIC RESONANCE IMAGING** APPARATUS

PUB. NO.: 2003-305022 [JP 2003305022 A]
PUBLISHED: October 28, 2003 (20031028)
INVENTOR(s): NABEYA AKIRA
APPLICANT(s): GE MEDICAL SYSTEMS GLOBAL TECHNOLOGY CO LLC
APPL. NO.: 2003-107392 [JP 2003107392]
Division of 2000-093833 [JP 200093833]
FILED: March 30, 2000 (20000330)

ABSTRACT

PROBLEM TO BE SOLVED: To provide a **TEM** (**transverse electromagnetic** mode) **resonator** type **RF coil** easily adjusted in tuning frequency in a manufacturing stage, a shield used for adjusting such an **RF coil**, and a **magnetic resonance imaging** apparatus using such a **TEM** resonator type **RF coil**.
SOLUTION: The **TEM** resonator type **RF coil** has a

cylindrical shield with annular orifice parts 112 at both ends; a plurality of line elements 118 arranged at equal spaces along an aperture 114, with both ends connected to the orifice parts; and a plurality of slits 116 dividing the shield in parallel with an axis in a position where the spacing of a plurality of line elements 118 is bisected. The shield is structured to be separable into a plurality of partial cylinders 119 at the parts of the slits 116.